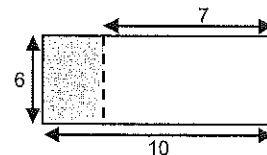


## Written Pre-Assessment

## Part A

1. (9.1) Write 2 number sentences for finding the area of the shaded part of the rectangle.

Sentence 1: ( \_\_\_\_\_ - \_\_\_\_\_ )  $\times$  \_\_\_\_\_ = 18Sentence 2: ( \_\_\_\_\_  $\times$  \_\_\_\_\_ ) - ( \_\_\_\_\_  $\times$  \_\_\_\_\_ ) = 18

- (9.5) Solve each equation. Show your work.

2.  $3x - 3 = x - 9$

3.  $6x - 42 = 2x - 2$

Solution \_\_\_\_\_

Solution \_\_\_\_\_

4.  $-2(n + 4) = -20$

5.  $2 = \frac{1}{3}(12 - t)$

Solution \_\_\_\_\_

Solution \_\_\_\_\_

6. (9.11) One formula for converting between Celsius and Fahrenheit temperatures is
- $F = (1.8 \times C) + 32$
- . Convert the following:

$-10\text{ }^{\circ}\text{C} = \text{_____ }^{\circ}\text{F}$

7. (9.5) There are 90 cards in a certain deck of cards. Two out of every 6 cards is number-side up. How many cards are number-side up?

There are \_\_\_\_\_ number-side up cards.



Use the order of operations to evaluate each expression.



8.  $12 + 9 \div 3 \times 3 = \text{_____}$

9.  $9 \times 8 - 3^2 + 7 = \text{_____}$

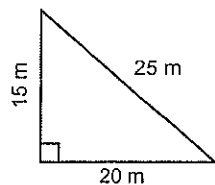
**Unit  
9**
**Written Pre-Assessment** *continued*

(9.8) Use the formulas given to solve the problems below. Record the formula you use to solve each problem.

Area	
Parallelogram	$A = b \times h$
Triangle	$A = \frac{1}{2} \times b \times h$
Circle	$A = \pi \times r^2$

Volume	
Rectangular Prism	$V = B \times h$
Cylinder	$V = \pi \times r^2 \times h$
Sphere	$V = \frac{4}{3} \times \pi \times r^3$

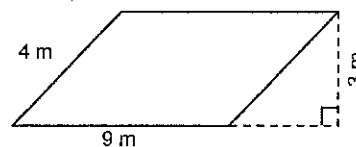
10.



Area = \_\_\_\_\_  
(unit)

Formula = \_\_\_\_\_

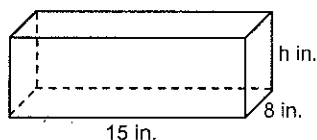
11.



Area = \_\_\_\_\_  
(unit)

Formula = \_\_\_\_\_

12.



$$V = 1320 \text{ in.}^3$$

$h =$  \_\_\_\_\_  
(unit)

Formula = \_\_\_\_\_

13. (9.7 & 9.9) Without using a protractor, find the measure  $c$  of each numbered angle.

Lines  $c$  and  $f$  are parallel.

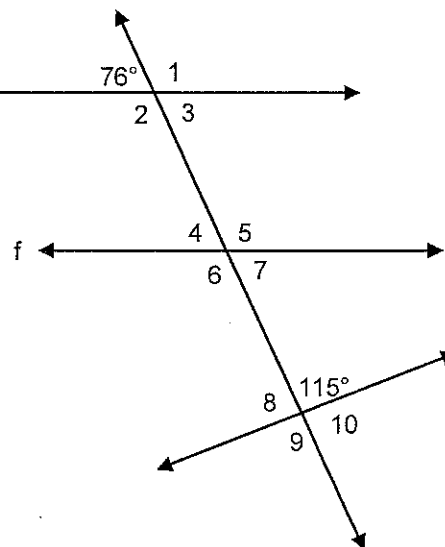


a. List all the angles in the figure at the right that measure  $104^\circ$ .

\_\_\_\_\_

b. List all the angles that measure  $65^\circ$ .

\_\_\_\_\_



Name \_\_\_\_\_

Date \_\_\_\_\_

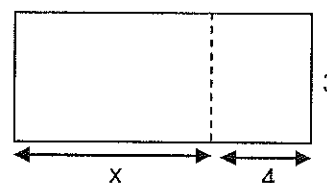
Time \_\_\_\_\_

**Unit  
9****Written Pre-Assessment** *continued***Part B**

14. (9.1) The area of the rectangle shown at the right is  $60 \text{ units}^2$ .

- a. Write a number sentence that you can use to find the value of  $x$ .

Number sentence \_\_\_\_\_

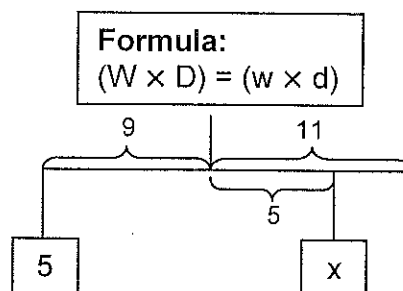


- b. Solve for  $x$ . Show your work.

$x =$  \_\_\_\_\_ units

15. (9.6) The mobile shown at the right is in balance. The fulcrum of the mobile is the center point of the rod.

What is the weight of the object to the right of the fulcrum?



**Formula:**  
 $(W \times D) = (w \times d)$

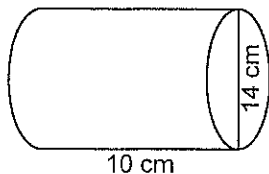
\_\_\_\_\_ units

- (9.13) Use the formulas given to solve the problems below. Record the formula you use to solve each problem.

Area	
Parallelogram	$A = b \times h$
Triangle	$A = \frac{1}{2} \times b \times h$
Circle	$A = \pi \times r^2$

Volume	
Rectangular Prism	$V = B \times h$
Cylinder	$V = \pi \times r^2 \times h$
Sphere	$V = \frac{4}{3} \times \pi \times r^3$

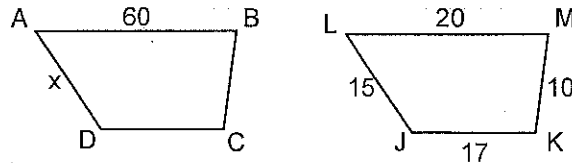
16.



Volume = \_\_\_\_\_  
(unit)

Formula = \_\_\_\_\_

17. (9.7 & 9.9) Figures  $ABCD$  and  $LMJK$  are similar. Figure  $ABCD$  is an enlargement of  $LMJK$ .



- a. The size-change factor that describes the enlargement is \_\_\_\_\_ X.
- b. Find the length of side  $x$ .  $x =$  \_\_\_\_\_
- c. Calculate the perimeter of  $LMJK$ . Then explain how you can use the size-change factor to find the perimeter of  $ABCD$ .  
Perimeter of  $LMJK =$  \_\_\_\_\_ units. Explanation: \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

18. (9.10) Using a trial-and-error-method, find an approximate solution to the equation  $x^2 - 1 = 71$ . Record your results in the table below. Use the suggested number to get started. Stop when your value for  $x^2 - 1$  is within 1 of 71.

$x$	$x^2$	$x^2 - 1$	Compare $x^2 - 1$ to 71
8	64	63	$63 < 71$

19. (9.11) One formula for converting between Celsius and Fahrenheit temperatures is  $F = (1.8 \times C) + 32$ . Convert the following:

$68^\circ\text{F} =$  \_\_\_\_\_  $^\circ\text{C}$

20. (9.7 & 9.9) Circle the formula that is equivalent to  $x = (y \times 20) - 6$ .

$x + 6 = 20y$

$6x = 20y$

$x - 6 = 20y$

Name \_\_\_\_\_

Date \_\_\_\_\_

Time \_\_\_\_\_

**Unit  
9****Written Pre-Assessment** *continued***Part C**

21. (9.7) Circle the equation that describes the relationship between the numbers in the table at the right.



A.  $y = 2x + 1$

B.  $y = \frac{x}{2} + 1$

C.  $y = 2x - 1$

D.  $x = 2y - 1$

x	y
0	1
2	2
4	3
5	$3\frac{1}{2}$
8	5



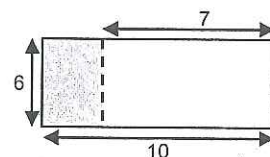
## Written Pre-Assessment

## Part A

1. (9.1) Write 2 number sentences for finding the area of the shaded part of the rectangle.

Sentence 1:  $(10 - 7) \times 6 = 18$

Sentence 2:  $(10 \times 6) - (7 \times 6) = 18$



- (9.5) Solve each equation. Show your work.

2.  $3x - 3 = x - 9$

3.  $6x - 42 = 2x - 2$

Solution  $x = -3$

Solution  $x = 10$

4.  $-2(n + 4) = -20$

5.  $2 = \frac{1}{3}(12 - t)$

Solution  $n = 6$

Solution  $t = 6$

6. (9.11) One formula for converting between Celsius and Fahrenheit temperatures is  $F = (1.8 \times C) + 32$ . Convert the following:

$-10^\circ\text{C} = 14^\circ\text{F}$

7. (9.5) There are 90 cards in a certain deck of cards. Two out of every 6 cards is number-side up. How many cards are number-side up?

There are 30 number-side up cards.



Use the order of operations to evaluate each expression.



8.  $12 + 9 \div 3 \times 3 = 21$

9.  $9 \times 8 - 3^2 + 7 = 70$

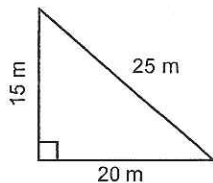
Unit  
9Written Pre-Assessment *continued*

(9.8) Use the formulas given to solve the problems below. Record the formula you use to solve each problem.

Area	
Parallelogram	$A = b \times h$
Triangle	$A = \frac{1}{2} \times b \times h$
Circle	$A = \pi \times r^2$

Volume	
Rectangular Prism	$V = B \times h$
Cylinder	$V = \pi \times r^2 \times h$
Sphere	$V = \frac{4}{3} \times \pi \times r^3$

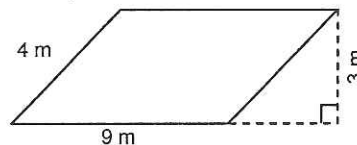
10.



Area = 150m<sup>2</sup>  
(unit)

Formula =  $A = \frac{1}{2} \cdot b \cdot h$

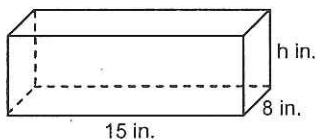
11.



Area = 27m<sup>2</sup>  
(unit)

Formula =  $A = b \cdot h$

12.



$V = 1320 \text{ in.}^3$

$h =$  11 in  
(unit)

Formula =  $V = B \cdot h$

13. (9.7 & 9.9) Without using a protractor, find the measure  $c$  of each numbered angle.

Lines  $c$  and  $f$  are parallel.

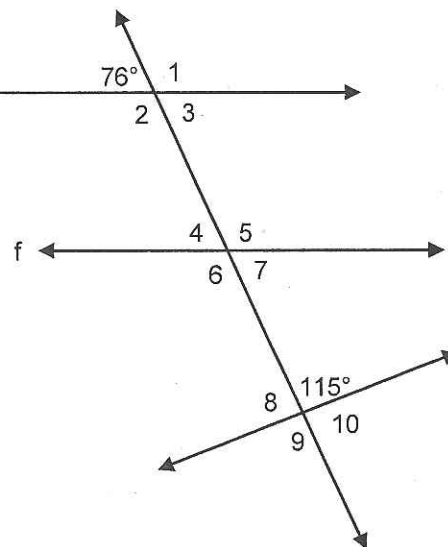


a. List all the angles in the figure at the right that measure  $104^\circ$ .

$\angle 1, \angle 2, \angle 5, \angle 6$

b. List all the angles that measure  $65^\circ$ .

$\angle 8, \angle 10$



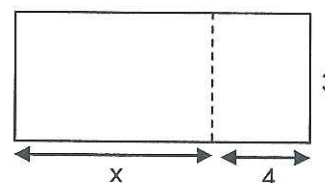


## Part B

14. (9.1) The area of the rectangle shown at the right is 60  $\text{units}^2$ .

- a. Write a number sentence that you can use to find the value of  $x$ .

Number sentence  $3(x+4) = 60$



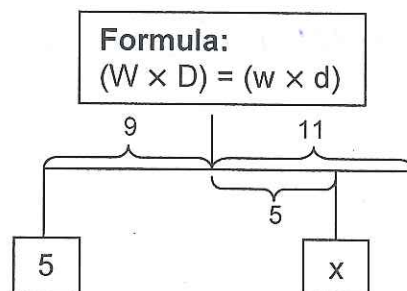
- b. Solve for  $x$ . Show your work.

$x =$  16  $\text{units}$

15. (9.6) The mobile shown at the right is in balance. The fulcrum of the mobile is the center point of the rod.

What is the weight of the object to the right of the fulcrum?

9  $\text{units}$



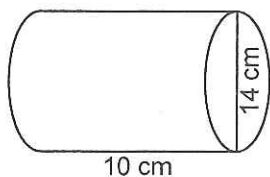
**Formula:**  
 $(W \times D) = (w \times d)$

- (9.13) Use the formulas given to solve the problems below. Record the formula you use to solve each problem.

Area	
Parallelogram	$A = b \times h$
Triangle	$A = \frac{1}{2} \times b \times h$
Circle	$A = \pi \times r^2$

Volume	
Rectangular Prism	$V = B \times h$
Cylinder	$V = \pi \times r^2 \times h$
Sphere	$V = \frac{4}{3} \times \pi \times r^3$

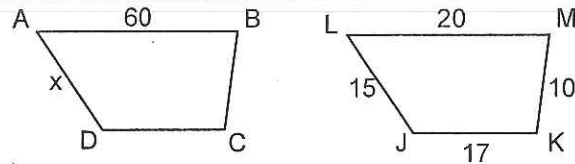
16.



Volume =  $15386 \text{ cm}^3$  (unit)

Formula =  $V = \pi \cdot r^2 \cdot h$

17. (9.7 & 9.9) Figures  $ABCD$  and  $LMJK$  are similar. Figure  $ABCD$  is an enlargement of  $LMJK$ .



- a. The size-change factor that describes the enlargement is 3 X.
- b. Find the length of side  $x$ .  $x =$  45 units
- c. Calculate the perimeter of  $LMJK$ . Then explain how you can use the size-change factor to find the perimeter of  $ABCD$ .  
 Perimeter of  $LMJK =$  62 units. Explanation: Use the size change factor on the perimeter  $\rightarrow 62 \times 3 = 186$  units

18. (9.10) Using a trial-and-error-method, find an approximate solution to the equation  $x^2 - 1 = 71$ . Record your results in the table below. Use the suggested number to get started. Stop when your value for  $x^2 - 1$  is within 1 of 71.

$x$	$x^2$	$x^2 - 1$	Compare $x^2 - 1$ to 71
8	64	63	$63 < 71$

19. (9.11) One formula for converting between Celsius and Fahrenheit temperatures is  $F = (1.8 \times C) + 32$ . Convert the following:

$68^\circ\text{F} =$  20  $^\circ\text{C}$

20. (9.7 & 9.9) Circle the formula that is equivalent to  $x = (y \times 20) - 6$ .

$x + 6 = 20y$

$6x = 20y$

$x - 6 = 20y$

Name \_\_\_\_\_

Date \_\_\_\_\_

Time \_\_\_\_\_

**Unit  
9****Written Pre-Assessment** *continued***Part C**

21. (9.7) Circle the equation that describes the relationship between the numbers in the table at the right.



A.  $y = 2x + 1$

B.  $y = \frac{x}{2} + 1$

C.  $y = 2x - 1$

D.  $x = 2y - 1$

x	y
0	1
2	2
4	3
5	3 ½
8	5

